

THE  
BOSTON MEDICAL AND SURGICAL  
JOURNAL.

VOL. VII.] WEDNESDAY, JANUARY 16, 1833. [NO. 22.

LOSS OF VOICE.

*Cases of Aphonia, depending upon an Affection of the Head.* By JOHN WEBSTER, M.D., Physician to St. George's and St. James's Dispensary, &c.

THE following cases of Aphonia, which, along with some others, have lately come under my observation, as well from the nature of the symptoms exhibited, as the mode of treatment pursued, are, I am disposed to think, worthy of notice; particularly, as the nature and seat of such kind of affections have hitherto been generally viewed in a very different light from what it is intended, in the present paper, to investigate and explain.

In those individuals, there was principally observed a peculiar affection, amounting to an almost total loss of voice, without there being, at the same time, any decided proof of actual disease existing in the larynx or glottis—sufficient, at least, to account for the presence of all the symptoms.

Hitherto similar diseases, or extinctions of voice, as they are sometimes called, have generally been considered by physicians, as likewise by the patients themselves, to depend upon some affection in the larynx, the trachea, or other organs connected with the function of breathing. But from a detail of the symptoms characterizing these four cases, it will be satisfactorily shown that the loss of voice, in every instance, was occasioned, not by any disease in the organ apparently affected, but in reality to arise from a paralytic state of the nerves distributed on the larynx and glottis; caused, in the first place, by pressure, or some other diseased condition, in the cerebrum.

That affections of the brain, and of the nerves proceeding from that organ, produce disease in distant parts of the human body, is a circumstance almost too well known to require any illustration, since, among other examples, it is seen daily occurring in paralysis, and the like complaints. Nevertheless, to point out how frequently the organs of respiration, and of the voice, are affected by diseases in the cerebrum, and which consequently are sufficient to derange the functions of the nerves proceeding to particular parts of the body, will not be altogether foreign from the present investigation: on the contrary, it appears particularly appropriate, and may serve to explain the point now proposed to be established.

Thus, apoplexy produces stertorous breathing, with a partial and often a total loss of speech. Hydrocephalus, occurring in children, is fre-

quently accompanied by a croaking kind of sound in the voice, or a spasmodic affection in breathing; and further, in a paper on Hooping-cough I published some years ago in this Journal, it was demonstrated that congestion in the bloodvessels of the brain, and effusion of serum in the ventricles or on the membranes of that organ, which are so commonly observed in the dissection of those dying by this complaint, materially tend, during life, if not to produce, at least to increase in violence and frequency, the fits of coughing and sickness pathognomic of pertussis. Should this opinion still be considered hypothetical, it must, however, have some weight to know that the treatment then recommended, namely, leeches to the forehead and blisters behind the ears, is generally so successful as to cure the patient with certainty and expedition.

Other arguments might be advanced to prove the influence affections of the head have upon the organs of respiration; but it appears almost unnecessary further to explain the action which a diseased condition of the brain and nerves exerts on these organs, and on the voice: more especially since the nervous influence must be the same on these as on other parts of the human body. For, should there exist an affection of that part of the cerebrum, from whence the nerves distributed on the glottis and larynx arise, the functions of that organ must consequently be disordered, or perhaps destroyed; at least, so long as any diseased action, or interruption of function in the nerves, continues: much in the same way as disease of the spine paralyses the bladder, or suspends the motion of an extremity.

Hitherto, reasoning upon such physiological principles has been often overlooked by medical men; and, from inattention to this point, I have been led, in cases similar to those now detailed, totally to neglect the circumstances just mentioned, and instead of considering complaints like the present as depending upon a diseased condition of the brain and nerves, such losses of voice were thought to arise principally, if not wholly, from an affection in the larynx or glottis itself; to which parts, consequently, the remedies formerly employed for their removal were chiefly, and, as it was then believed, properly directed.

But the views intended to be explained on this subject will, perhaps, be better understood by considering the history and symptoms of the cases subjoined; especially if we take into consideration the effects of the treatment pursued, in consequence of the above reasoning, which is founded upon the conclusions come to in regard to the actual seat and nature of the complaint; viz. that the loss of voice in these individuals depended upon a paralytic condition of the larynx and glottis, in consequence of derangement of the nervous influence distributed to the parts affected, proceeding from an affection of the brain and nerves—but not, as is commonly supposed, arising from any disease really existing in the larynx or the glottis, as the organ of voice.

**CASE I.** George Wright, æt. sixteen, groom. When first seen, this patient had an attack of bronchitis, which was, however, soon removed by the exhibition of demulcent and aperient medicines, and the application of a blister to the chest: on the 14th of January last, he was considered free from all pectoral complaints.

Nevertheless, at this period an affection or weakness of voice showed itself; and, on the 16th, it became so remarkable that Wright could only with the greatest difficulty make himself heard by the bystanders, being scarcely able to speak, even in the lowest whisper. Notwithstanding the presence of this symptom, he did not complain of any pain in the throat or chest, nor was there any dyspnoea; but the patient now for the first time mentioned that he had a severe headache, accompanied by drowsiness and deafness; and, on examining the pupils of both eyes, they were observed to be very much dilated, and almost insensible to the influence of light. It was from these circumstances that attention was especially directed to the cerebral symptoms, which ultimately led me to consider this affection of the head to be, in reality, a principal cause in producing loss of voice in this individual; and subsequent investigation, confirmed by the successful treatment adopted, demonstrated the correctness of the pathological views then entertained.

Five grains of the extract of conium were given at night, followed by an aperient in the morning; and a demulcent medicine was also ordered to be taken, twice or three times a day.

Little or no benefit, as might be expected, followed this mode of treatment: on the contrary, the loss of voice still continued, and it was latterly so much affected that the patient sometimes could not articulate a single word; the air during these efforts to speak appearing to pass through the rima glottis, as if he were blowing a musical instrument, without a note being produced. It also merits observation, that if any alleviation of the pain in the head occurred, and especially if, at the same time, the pupils became less dilated, and were sensible to the impression of light, the voice invariably became stronger and more distinct; thus showing that the condition of the brain, and consequently the function of the nerves distributed on the larynx and glottis, was materially concerned in the disease; and, therefore, it appeared this affection of the head must first be removed, in order to restore the natural tone and strength of the voice.

In accordance with the above reasoning, a blister was applied to each temple on the 24th, which discharged freely; and the patient, when seen on the 26th, was found to have materially improved: the headache was almost gone, excepting over the right eye; the pupils appeared less dilated, and sensible to light, and the words, when speaking, could now be more distinctly articulated, although still in a low tone. The countenance likewise looked clearer, was not so anxious, and, to use the patient's expression, 'he felt almost quite well,' excepting the continued weakness of his voice.

Extract of conium, which had been taken for the last two nights, was continued, and an aperient mixture prescribed in the morning; at the same time, more nourishment was allowed, as the appetite and digestion had improved. On the 28th, the patient felt considerably better: the pupils contracted when exposed to a strong light, and the deafness and headache were almost removed; whilst the tone of the voice was nearly natural, and he articulated words correctly, although not strongly. A week afterwards, he had almost recovered his usual voice, had no head affection; and, when seen for the last time, in the middle of February, he was convalescent.

**CASE II.** Mrs. Ellis, æt. twenty-one, married, but without children. On the 15th December last, Mrs. E. first consulted me as a patient, when she was affected by hysterical dyspeptic complaints, a slight cold, with an occasional cough; which, nevertheless, became one night so severe, that, in the violence of the attack, some slight streaks of blood were observed in the frothy expectoration. The bowels were costive, and the appetite impaired; but at this date there was not any affection of the head, and the voice was perfectly natural.

Camphor mixture, peppermint water, with aperients, were exhibited; and, after a few days, a blister was applied to the lower part of the chest and epigastrium. By these means the patient's health became much improved, her spirits got better; and although there was still an occasional cough, she was altogether relieved, and considered to be nearly convalescent. At this period, extract of hyoscyamus was ordered at night, and decoction of bark added to the antispasmodic mixture.

Early in January last, the voice was observed to be weak; but as she was then thought to be only affected with a common hoarseness, very little attention was consequently at first directed to the circumstance. However, on the 12th of the month, the voice became so feeble that even a single word could with difficulty be articulated. There was no pain of the throat, and she was free from dyspnoea: but she now first complained of being deaf, with a feeling of noise in the ears, and considerable headache, occasionally accompanied by giddiness; and on examining the pupils of both eyes, they were found to be very much dilated, and nearly insensible to light; whilst, on inquiry, it was ascertained that at night she could with difficulty see by the light of a candle, being then, in fact, nearly blind.

At this stage of the disease, an aperient medicine was exhibited in the morning; afterwards decoction of bark with sulphuric æther, and extract of conium at night. By continuing these remedies for a few days, Mrs. Ellis improved a little in her general health; her voice appeared somewhat stronger, but it soon again became as weak as before, and could scarcely at last be heard; the pupils were anew dilated, along with dimness of sight, whilst the noise in the ears, and other head symptoms, already mentioned, again returned. In consequence of these circumstances, on the 2d of February a blister was applied to each temple, and a brisk purgative ordered at night, with a demulcent tonic mixture morning and evening.

The blisters discharged freely; after this, extract of conium and squill were given at night, and an aperient draught in the morning, to be repeated when found necessary. About a week after the application of the blisters, all the head symptoms were nearly removed, and the voice had almost recovered its natural tone and strength; the pupils appeared to be scarcely affected, and the patient could see to read or work by candle-light; in short, she was considered all but convalescent. On the 12th of February Mrs. Ellis was free from any affection of the voice, and she therefore reported herself quite recovered.

The two following cases occurred some months subsequent to the preceding: they are of a similar character, were successfully treated in

the same manner, and they fully confirm the views then entertained regarding the nature of this peculiar affection. The symptoms are related with more brevity, as any lengthened account would be superfluous, and is, indeed, not required to elucidate the subject. One remark, however, will not be here out of place: the two first cases occurred in winter, the latter during the warm weather of summer.

**CASE III.** Dinah Swales, æt. twenty-eight, single; 7th June, 1832. Is of a full habit of body, and has had occasionally hysterical dyspeptic complaints. For the last ten days, has been affected with pain in the head, vertigo, and dimness of sight, at which period she began to lose her voice. At present, she can scarcely articulate so as to be heard, but has no pain of throat or dyspnoea. The pupils are dilated, almost totally insensible to light, and she cannot always see distinctly; besides noise in the ears when flushed by exertion, she feels a throbbing at the temples, whilst the voice totally fails, and she is then almost obliged to express herself by signs. Tongue white; bowels open; pulse soft; skin natural; catamenia regular; feels dyspeptic, and complains occasionally of flatulency. For these complaints, in the first instance, she took compound rhubarb-pill at night, with an aperient demulcent mixture, also containing camphor, morning and evening. Guided by the experience of former cases, on the 9th four leeches were applied to the forehead, and a blister to each temple at night; which remedies acted properly. Next day, there was evidently less dimness of sight, the left pupil was not much dilated, and the noise in the ears and vertigo were considerably diminished. The tone of the voice sounded decidedly stronger, and the articulation of words was more distinct; the appetite was now good, the bowels open, and there scarcely existed any dyspeptic symptoms.

The voice continued daily to improve, as likewise the sight, unless she was heated by exertion, when these symptoms were always observed to become worse. As the patient, in consequence of exposure to the cold on the 14th, had a slight cough and expectoration, compound squill pill, with an aperient demulcent mixture, were prescribed, whereby these symptoms were quickly removed. On the 16th, the tone of the voice was improved, the patient felt nearly free from any complaint in the head, and had no affection of the sight, unless she was hurried or fatigued; under which circumstances the voice became decidedly weaker. For these reasons, a second application of blisters to the temples was advised, and the aperient demulcent medicines were continued. When next seen, on the 21st June, the blisters, it was reported, had discharged freely, and the patient was now entirely free from any head symptoms, whilst the sight and voice were perfectly natural; she was in fact convalescent, and it has since been ascertained there was no return of the complaint.

**CASE IV.** Mary Joyce, æt. forty, single; 11th June, 1832. Is of a spare habit of body, and generally in the enjoyment of good health. About a fortnight ago, she began to lose her voice, whilst, at the same time, she complained of pain in the head, giddiness, noise in the ears, and dimness of sight, but felt entirely free from any pectoral complaints, and has not been low-spirited or hysterical. At present there is no dyspnoea, pain in the throat, nor any other symptom indicating an affec-

tion of the organs of respiration, excepting that the voice is exceedingly weak, sometimes scarcely audible; she complains, however, of pain in the forehead, over the right eye, along with the other symptoms described as having first appeared a fortnight ago, and the pupils are dilated. Tongue is rather foul; but the bowels are open, and catamenia regular.

Thinking it would be advisable, in this case, first to try the effect of leeches, without blisters, six were accordingly applied to the centre of the forehead, in the same manner as I formerly recommended, with so decided advantage, in whooping-cough; at the same time, an aloetic and rhubarb pill was ordered night and morning. As the leeches did not bite properly, not much blood was extracted: however, the head next day felt less painful, the sight was improved, and the tone and strength of the voice seemed augmented; nevertheless, the pills were ordered to be continued, and six more leeches to be applied, as before, to the forehead.

The second application of leeches was followed by considerable loss of blood; and on the 17th of June all complaint in the head had vanished, whilst the voice was strong, and perfectly natural; so much so, that the patient was discharged a few days afterwards convalescent.

Similar instances of extinction of voice are by no means uncommon; indeed, every medical practitioner must have met with them repeatedly in the course of his professional experience. Generally, however, such complaints have been treated by remedies more immediately directed to the throat and parts adjacent, since these structures were apparently the seat of disease. Like other physicians, I have also formerly pursued this plan of treatment, when certainly it proved, in the generality of cases, both tedious and unsatisfactory, unless in individuals where there was actual disease in the larynx or neighboring parts; then the commonly-followed method of cure should be recommended. But, judging from the details now given, and supported by other examples, which it is unnecessary and would be tedious to relate, we may fairly conclude little difficulty will henceforward be encountered in treating affections of the voice, wherever any cerebral symptoms accompany the complaint, constituting a peculiarity doubtless of much more frequent occurrence than many are perhaps disposed to suspect, in consequence of similar symptoms being either overlooked, or not thought to be of sufficient importance to merit attention.

To illustrate the great influence affections of the brain have upon the voice, reference might be made to what occasionally occurs in public meetings; where individuals, after considerable exertion in speaking, or from mental excitement, will sometimes lose their voice entirely, and even suddenly, so as to be obliged to stop in the middle of a speech. Intoxication, fear, and strong mental impressions, will likewise deprive the person so affected, sometimes, of the power of articulation. And if such transitory cerebral influences can thus act upon the voice, it will surely, without much hesitation, be granted, that severe affections of the brain, or a more permanent disorder in the functions of the nerves distributed on the larynx and glottis, would produce similar, if not greater effects.

Anatomically considered, it will be admitted that any affection of the



recurrent and internal laryngeal nerves must materially influence the voice; as these nerves constitute the chief agent or moving power of that function. And we know, if any tumor press upon the above-named nerves, during their course, from the superior and lateral part of the medulla oblongata, to their distribution on the larynx and parts adjacent; or if these nerves should be cut by accident, or in experiments, the voice then becomes affected, or even destroyed. If such evident causes have so decided an effect upon the voice, other, or more temporary, may likewise produce similar results. At all events, these considerations should not be overlooked; as a paralytic condition, or any disease of these nerves, may as likely exist, as in those of the eye, the taste, or of motion. From these views, the propriety of cupping on the nape of the neck, and the application of blisters there, and to the occiput, in addition to the mode of treatment above detailed, appears evident; and in some cases certainly these means ought to be employed, since undoubtedly they must prove efficient and advantageous.

A late celebrated physician once said, 'the brain, and the various diseases to which it is liable, is like a terra incognita, and scarcely understood.' Since that time, much has undoubtedly been done by medical inquirers to advance our knowledge of this most important branch of pathology. Still there remains a great deal to be ascertained, so as to be able to clear up some points that are yet but obscurely explained; and, without wishing to attach more importance to the present subject than it really deserves, it does certainly appear that a diseased condition of the brain, thence affecting the functions of the nerves distributed on particular parts of the body, has more influence in producing complaints like those above described than we are sometimes disposed to allow. Should, therefore, the cases just related, and the few accompanying although imperfect observations, prove the means of inducing others to make further inquiry on this subject, so as to confirm more fully, or even to refute, the propositions now advanced; whilst one of the objects had in view, when drawing up this communication, is thereby gained, our knowledge of an interesting class of affections will be, under any circumstances, both improved and extended.—*London Medical and Physical Journal.*

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#### EPIDEMIC MILITARY SWEATING FEVER.

*On an Epidemic Military Sweating Fever, which raged in the Department of the Oise.* By Dr. MENIERE.

On the 9th of May, the Minister of Commerce and of Public Works was informed by the authorities of the department of the Oise, that a number of the districts were afflicted with an epidemic disease; and they requested that physicians might be sent to investigate its nature. The intelligence and petition were transmitted the same day to the Dean of the Faculty of Medicine. On the 10th Drs. Orfila, Pinel-Grandchamp, Hourmann, and Menière, set out for Beauvais, where the physicians and magistrates gave the requisite information. The disease proved to be the Military, or Picardy sweating fever, which had been observed in these localities several times before, and remarkably so in 1821.

It broke out in the last week of April, or first of May, and was very mild, as, out of 84 patients, none had hitherto died. Its progress was noticed to be much arrested by cold weather. In some places its invasion was quite sudden after a storm, during which the thermometer rose considerably; and more than one half of the inhabitants of a village were thus seized in the course of one night. Females were more disposed to it than males. The disease commences with headache, sweating, and dyspnoea; the skin then becomes red and very hot, and there is a most troublesome pricking sensation in the surface. No local pain; pulse full and soft. The dyspnoea appears to depend on a congestion of blood in the lungs and heart, and not on any weakness of any of the exterior respiratory organs: the plethora of the heart and large vessels is indicated by the ventricular pulsations being diffused, heavy, and slow, with little sound on auscultation. There is a distressing feeling of a choking weight in the præcordial region, and sometimes also in the epigastrium; the pulsations of the celiac artery are so strong as to heave up the abdominal parietes, and cause most obstinate gastralgia. The sweating is often prodigiously great, patients being obliged to change their shirts 20 or 30 times in the course of one night, and this 'flux' continuing to the like extent for two or three days. Its odor was that of rotten straw, or of a weak solution of chlorine, or of the evacuations of the cholera morbus. The watery halitus from the skin is kept rarified by the heat of the bed-clothes; when these are removed it is condensed, and forms a thick cloud, which speedily resolves itself into a sort of rain. The bowels are usually constipated, and the urine is scanty. The sweating lasts sometimes for four, five and six days, and it ceases gradually without the substitution of any other critical evacuation, or the occurrence of other symptoms; but in the majority of cases, a vesicular eruption on the chest, neck, back, and successively over all the body, appears on the second, third, or fourth day. It varies exceedingly in different patients: the vesicles are usually of the size of millet seeds—here and there a few larger ones are scattered. In the early stage the rash appears papular; when it dies away, the part is found covered with furfuraceous scales. The average duration of the fever, from its onset to the recovery of the patient, is from 8 to 14 days. The symptoms demanding most attention are those of congestion in the head and chest; threatening, in the one case, delirium and apoplexy—in the other, hæmoptysis and fatal dyspnoea.

The miliary epidemic of this year differs, in several important respects, from former eruptions of the disease; and it seems to have received a certain stamp from its more formidable brother, the cholera morbus, which exists at the same time in the same villages and districts. In the stead of the thoracic and cerebral symptoms, diarrhoea, vomiting, and gastro-enteritic irritation, have frequently taken their place, and have carried off many of those affected with them. At Noailles, the chief feature of the epidemic was the cerebral congestion; while at Cauvigny, only one league distant, it was congestion of the lungs, causing death sometimes in the space of a few hours. There was no obvious difference in the topography of these two places to explain this diversity of character. In 1831, the disease raged severely at Cauvigny; there



were 23 deaths, most of which were caused by the slow developement of gastro-enteritic disease : in the present epidemic, death takes place at the very onset of the disease, or at the time of the miliary eruption, the patients suffering dreadful anxiety and distress at the præcordial region—racking pains and spasmodic stiffness of the back : sometimes they vomit, or rather hawk up, much frothy blood. At Chateau Rouge, many cases of what the French denominate 'la suette exquise,' that is, the sweating fever without any miliary eruption, were seen. In several patients, who were in a state of convalescence from the epidemic, symptoms of typhoid fever, such as stupor, emaciation, red patches on the belly, pulse frequent and soft, tongue red, and rough in the middle and towards the base, breath fetid, &c. supervened. From comparing the reports from 24 different districts in Picardy, it appears that, in the course of two or three days, not fewer than 5000 persons were seized with this epidemic disease. Many opinions have been offered to account for the frequent appearance of the miliary sweating fever in ancient Picardy ; the miasmata of marshes and bad nourishment have been chiefly insisted upon, but we think incorrectly, as most of the patients were living in healthy dry localities, well housed, fed, and clothed, and frequently in affluence and ease. With regard to the occasional or exciting cause, there is little discrepancy of opinion : the elevation of temperature, and an electrical state of the atmosphere, have generally preceded the appearance of the malady. The miliary epidemic is fully as capricious in its course and career as the cholera ; places being spared in the very line of its advance. It is certainly not contagious, as announced by the older authors.

*Treatment.* Formerly, when the disease was considered to proceed from a leaven, or poison, contaminating the blood, the efforts of the physician were directed to favor the expulsion of the peccant matter by sudorifics, cordials, warm ptisans and heavy bedclothes. Boyer, Tessier and others, about the year 1773, introduced quite an opposite plan of cure. Venesection at the onset of the malady, mild tepid drinks, small doses of hypnotic medicines, and the very gentlest revulsive applications to the feet and hands, such as bathing them with mustard water, are most proper ; in short, whatever encourages the breaking out of the rash, which generally is accompanied with relief. Mild aperients are always useful. When symptoms of congestion in the lungs or head occur, more active depletion and counter-irritation must be immediately adopted. We must be on our guard however not to lower our patient too much, as there is a strong tendency in this disease to nervous collapse. Whenever the eruption appears, the treatment ought to be limited to the mere regulation of the diet, &c. Many patients who have been bled at this period for dyspnœa, have rapidly sunk. The greatest care is necessary during the convalescence to prevent a relapse ; every excitant, or irregularity, must be studiously avoided.—*Archives Générales de Médecine.*

## INFLUENCE OF OCCUPATION ON HEALTH.—NO. VII.

[Communicated for the Boston Medical and Surgical Journal.]

**CLASS IX.**—*Occupations injurious by the gases evolved in human respiration and combustion.* It is a fact too familiar to require proof, that the air which has once entered the human lungs is no longer in a state fit for sustaining life. A human being, inclosed in a certain limited portion of air, as an air-tight room for instance, would soon begin to experience an uncomfortable sensation from the atmosphere around him becoming mixed with the impure air emitted from the lungs. This sensation gradually increasing, respiration would be continually rendered more difficult, and become at length absolutely impossible. It is found by accurate experiment, that 300 cubic inches of air can be breathed but 35 times, or but little more than one minute, before it produces the symptoms of suffocation. The horrible consequences which have resulted from actually crowding human bodies together in close rooms, are sufficiently well known and need not be repeated. But it is not by these violent effects that the influence of insufficient ventilation is ordinarily recognized. The class perhaps which suffers most from the effects of confined air, is that of miners. In the vast regions excavated for coal in England, the external air enters slowly and with difficulty to take the place of that which is generated by the respiration of the inhabitants; and the more so, as the carbonic acid gas which is evolved, descends by its specific gravity, and does not pass out into the external air. The injury thus produced, however, is less felt in the lungs than it is in the system generally. The blood not being duly acted upon by the air, becomes vitiated and impure; the body is imperfectly nourished, its volume and strength diminish, and a general languor and debility ensue. These effects, however, are not suddenly manifested; and many continue to work in mines for years, before any obvious effect is produced upon the health.

But it is not necessary to descend below the surface of the earth to meet with a vitiated and corrupt atmosphere. Wherever a large number of persons are collected in rooms imperfectly ventilated, the air soon becomes unfitted for respiration, and incapable of carrying on properly the vital functions. The evils arising from imperfect supplies of fresh air in working apartments, are the less noticed, because the system soon becomes accustomed to the sensation, and we then breathe the unwholesome fluid which surrounds us with the same freedom as we should inhale the mountain air of the finest country. In this state of things, it is not so much the presence of any poisonous gas, as the absence of the oxygen, which forms the vivifying principle of the atmosphere, that does the mischief. Accordingly we find that, as in the case of the miners, the immediate effect on the lungs is by no means apparent; whereas, the gradual weakening of the blood, which is deprived of the nourishment that should impart to it health and richness, soon becomes manifest. The digestion is impaired, the strength diminishes, the skin acquires a sallow and dirty hue, and all the motions are performed with languor and debility. This view of the effect of breathing impure air,

has been particularly insisted on by a writer in the Edinburgh Medical Journal, Mr. Watson, Surgeon, Wanlockhead. From his paper, published in the CVI. Number of that periodical, we select the following facts and observations.

'In the year 1823, sixteen men were employed, during four months, in a mine where the deficiency of air was so considerable, that a candle would not burn for any length of time, except when the wick was made so open as to allow the greatest possible quantity of air to come in contact with the ignited part. The candle was placed generally in a sloping position. Notwithstanding the deficiency of air, none of the miners had any inflammatory complaints, but all complained of lassitude, debility, and drowsiness, particularly toward the end of each day's work, sixteen hours; and they all became gradually paler in the complexion.

'In 1824, an equal number of men were employed in the same mine with nearly the same result. Thirteen were quite free from any particular complaint,—one complained for a few weeks of a slight pain in the stomach,—the other two for a few days of pain in different parts of the body from obstructed perspiration.

'In 1826, sixteen men were employed five months in a mine where the quantity of air was still smaller than in the former; still the miners were free from any particular complaint. Only one complained of shifting pain from improper exposure when perspiring freely. In 1827, the same number of men were employed in the same mine for four months, and all remained free from complaint. Reasoning, then, from analogy, it seems fair to conclude, that a person placed in a medium where there is a considerable deficiency of oxygen, must become less liable to inflammatory action, and that this non-liability will be in direct ratio to the length of time he is confined in such medium. At least, this is no speculation founded on mere conjecture, but supported, in my opinion, by facts which have come under my own observation. From these, I draw the following inferences:—1st, That miners are not more liable to inflammatory complaints than any other class of the community. 2dly, That a majority of them, at least in this district, remain free from any particular affection of the chest. 3dly, That hydrothorax among miners is rather a rare disease, only two cases having occurred to me in the course of fifteen years' practice.'

From this view of the subject, then, it would appear that the effect of this and similar occupations is to diminish the activity of all the vital processes, to induce debility and lassitude, to check the process of assimilation, and thus to impair the tone and vigor of the system, without inducing specific disease.

Nearly allied to the gases produced by respiration, are those which result from the process of combustion. Indeed the analogy between these two processes is too striking to be passed over in silence. The oxygen of the atmosphere, which unites with and vivifies the blood, is the same principle which maintains the fire that warms and the lamp that guides us. A constant supply of air is equally necessary to both processes; the atmosphere is with equal certainty vitiated by both; and the gas most constantly produced by the one is the principal product of the other. Combustion is the rapid union of the combustible body

with oxygen, attended with the evolution of light and heat ; and the combustible element, which is common to the different substances employed as fuel, is carbon. We have then to consider this substance in its combination with oxygen, together with any other ingredient of our ordinary fuel which by combining with this gas produces a compound capable of acting on the human system.

Where any kind of fuel is burned without a proper outlet for the vitiated air, the carbonic acid evolved will act as a poison on those within the apartment. The reason why this effect has principally been noticed in charcoal, is that this substance, consisting of nearly pure carbon, burns without smoke or smell, and therefore its exhalations can only be perceived by their effect, that is, when too late to control them. It is on this account that charcoal is so often rashly burned in close apartments presenting no outlet for the air ; whereas, the same experiment tried with wood or sea-coal would at once render obvious the necessity of ventilation.

The contamination of the air by human respiration contributes to enhance the ill effects of all those trades which are carried on in crowded and artificially-heated rooms, into which the external air is not allowed freely to enter. The most unhealthy apartments I have seen, from the mere circumstance of confined air, are some of those occupied by shoemakers. The remedy is as obvious as the evil itself is manifest. The use of high and large apartments, where the employment requires any considerable number to be collected ; the establishment of a constant current of air, from a door or window to the fire in winter, or between windows in summer, so as to traverse the greatest possible extent ; and the free admission of air during the intervals of work, whenever circumstances permit, are measures of obvious utility, and will certainly effect the object proposed. I repeat that it is dangerous, in judging of the purity of the atmosphere in an apartment, to trust to the sensations experienced after being long exposed to it. In this, as in many things, the first impression is more likely to be correct than any subsequent judgment. There is nothing so much under the dominion of habit as the mere sensation conveyed by a state of atmosphere. An odor, which at first is intolerable, soon becomes less offensive, and shortly after a matter of indifference ; so that we entirely forget its presence till the entrance of a stranger, or our own return to the apartment after a certain absence, recalls it to our remembrance. One of the first effects of confined air, to one not accustomed to its influence, is headache. This effect is but temporary, and disappears after continued or repeated exposure. The cause, however, continues to act on the system, and sooner or later its effects will be manifest and unequivocal.

#### A RAY OF LIGHT ON THE CAUSE AND THE CURE OF CHOLERA.

[Communicated for the Boston Medical and Surgical Journal.]

MR. EDITOR,—In the last number of your Journal I saw a notice, taken from the London Medical Gazette, of the extraordinary and *oily appearance of the dew on the leaves of plants in the neighborhood of Rotterdam.*

On examining the dew in the early morn, it was found by several gardeners to be of an oily nature, instead of thin and clear, as it usually is, and to adhere somewhat to the fingers. This very remarkable change is said to have been simultaneous with the appearance of the cholera, and is attributed to some atmospheric peculiarity. In themselves, the above facts are of very great importance, and should be noted by the philosopher for future thought and investigation. My wish, however, at present, is to bring them up to the view of the profession, in connection with the fact recorded in a number of your Journal last summer (No. 5, Vol. 7) of an *oily appearance in the blood of those who died of cholera*. The record is contained in one of the interesting letters with which you favored your readers from Dr. Martyn Paine, of New York. Dr. P. states that he himself saw this phenomenon in two post-mortem examinations that he witnessed at the Crosby Street Hospital, and that the same appearance had been previously noticed in many other cases of cholera subjects, by Dr. Gale, of that city.

A third fact, with which the two above stated should be connected, is the professed and probable efficacy of *alkaline* medicine, as a preventive of the cholera, or as a cure for it. In this last case, i. e. when prescribed as a cure, attempts have been made to introduce it into the blood by the usual routine, or it has been introduced by direct injection into the veins.

These *three facts* may be wholly unconnected with each other. But allow me to ask, if even so feeble and uncertain a ray of light should be lost on a spot so clouded and dark as either the cause or the cure of the cholera? There is a possibility, surely, that the same peculiarity in the atmosphere caused the oily deposit on the leaves and in the blood; that this oil it is that acts as a virulent poison on the animal system; and that if it can be effectually and seasonably decomposed by an alkali, the system may be saved from its deadly effects. That these things are so, I will not affirm a belief, for I am no enthusiast: that, however, they are enough to *favor the opinion* that the use of alkaline draughts during the prevalence of the disease may be a means of prevention, and their safe and cautious introduction into the blood the most effectual mode of cure, I must affirm, for I am

AN OBSERVER OF FACTS.

January, 1833.

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## BOSTON MEDICAL AND SURGICAL JOURNAL.

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BOSTON, JANUARY 16, 1833.

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THE readers of this Journal should be apprised that several of the medical gentlemen, who have contributed most largely to its pages, are now devoting that time to *lecturing* which has heretofore been employed in preparing communications for us. We have also the pleasure of apprising them that when the usual term of lecturing is over, we have the as-

surance that their labors in behalf of this Journal and its readers will be resumed. Many thanks are also due to other correspondents whose valuable contributions have recently so much enhanced the interest and usefulness of our periodical, and a continuance of their favors is confidently relied on.

#### LUNATIC HOSPITAL AT WORCESTER.

THIS Institution, designed for the reception and care of the most unfortunate and abjectly miserable class of our fellow beings—for such lunatics as are now confined in any gaol or house of correction in the Commonwealth, under any order, decree, or sentence of any court or judicial officer—is now organized by the designation of all the proper officers, and the establishment of rules for its future government. The building that has been erected at Worcester, at the noble behest of a munificent legislature, is ready for the reception of its destined inmates; and we may shortly look for the gubernatorial proclamation that will direct the time and mode of their removal from their present inappropriate places of confinement.

Spacious as this edifice is, it is most probable that it will be forthwith filled by insane persons, and that, ere long, it will require to be extended in order fully to accomplish the humane purpose for which it was designed.

#### QUININE—HOW OBTAINED.

THE high price of this article is a great obstacle to its general introduction into practice; and there is little prospect, at present at least, that it can be afforded for less than it now is. The bark from which it is extracted yields but one fortieth part of the alkali; so that for a single ton of useful matter, forty tons of the cinchona must be transported across the Atlantic: hence the great expense attending its manufacture. Under these circumstances, the only effectual method of reducing its price is to manufacture it in the native region of the raw material. Why this has not already been done, we know not; but it is evident that any one who should undertake it, would command the market of the whole world. The subject is worthy of attention.

*Medical Application of Maternal Sorrow.*—M. Double—whose name must be familiar to our readers as that of an eminent physician in Paris—had lately occasion to read a memoir to the Academy of Sciences, in which he mentions the following circumstance as having first directed his attention to the sounds of the heart. Many years ago, when he was taking leave of his mother, she laid his head upon her bosom and wept in an agony of maternal grief at parting with him: but her philosophic son was otherwise employed the while. He was struck with the distinct manner in which he heard the beating of her heart and the convulsive sobs of her breathing—he listened to every sigh as illustrating the principles of acoustics—and hence he assures us the origin of the mode of examining



into diseases of the chest by auscultation, now so generally adopted. M. Double evidently thought the anecdote redounded to his credit; but we fear he will look in vain for any compliment on the score of feeling—truly his *sang froid* was indeed cold-blooded.—*London Medical Gazette.*

*On the Exhibition of Opium in large Doses in certain Diseases.*—The second No. of the Dublin Journal of Medical and Chemical Science, contains some interesting remarks by Dr. Stokes on this subject. From the facts he has recorded, he deems the following conclusions justifiable.

1st. That in certain cases of inflammation of serous and mucous membranes, where depletion by bloodletting, or other antiphlogistic measures, are inadmissible, and the system in a state of collapse, the exhibition of opium has a powerful effect in controlling the disease.

2d. That under these circumstances the remedy may be given in very large doses, with great benefit and safety.

3d. That its effect then is to raise the powers of life, and remove the local disease.

4th. That the poisonous effects of opium are rarely observed in these cases; the collapse and debility of the patient appearing to cause a tolerance of the remedy.

5th. The cases in which the utility of this practice has been ascertained are as follows:

Simple peritonitis, in a stage where bleeding cannot be performed. Low puerperal peritonitis. Peritonitis from perforation of the intestine; from the opening of an abscess into the sac; or lastly, after the operation of paracentesis in debilitated subjects. Violent diarrhoea, supervening in exhausted subjects. Phagedenic ulceration of the throat, in similar individuals. And cases of chronic gastritis, and gastro-duodentitis in patients exhausted by the long continuance of the disease.

6th. The cases in which this mode of treatment would be probably useful are—peritonitis from rupture of the bladder or uterus, traumatic rupture of the intestine, or after the operation for strangulated hernia.

The last observation which I shall make here is, that in most of these cases, particularly in those of diseases of serous membranes, wine was given in conjunction with the opium, and in all the patients were supported by a lightly nutritious diet.

*Case of Cholera Infantum cured by Lunar Caustic.* By JOSEPH C. SKINNER, M. D., of Hertford, N. C. (Communicated in a letter to Dr. Darrach.)—My daughter Cornelia, æt. seventeen months, was attacked about the middle of June, 1829, with the usual symptoms of cholera infantum, the most prominent of which were the following: occasional vomiting, particularly when any fluid was taken in the stomach; the matter ejected was sometimes tinged with bile, but more commonly it was merely the fluid taken in the stomach; the bowels were exceedingly irritable, the evacuations copious, frequent, and very offensive; sometimes of a clay color, at other times resembling coagulated milk; fever of a remittent form; skin hot and dry, &c. These symptoms commenced gradually and increased in severity daily until they became alarming. On examination of the mouth, I found the gums tumefied, and four molares making their way through, which was believed to be the exciting cause of the train of symptoms which I have described.

In the treatment of the case, my first object was to remove all sources of irritation; accordingly the gums were freely scarified, and the bowels well purged with calomel and calcined magnesia and injections of common salt and warm water. This practice was steadily adhered to for several days; but failing to produce the desired effect, and symptoms of prostration fast approaching, the pulse indicating a great degree of debility, and the fever assuming a more decided remittent type, indicating the influence of miasmata, I deemed it necessary to resort to tonics and stimulants. Accordingly I gave the patient half a grain of sulphate of quinine, with three grains of prepared chalk every two hours, and the sixth of a grain of opium every twelve hours, occasionally using an injection of melted fresh butter when the bowels were painful, a practice which had been remarkably successful in my hands in similar cases. In a few days I had the pleasure to witness the happy results; the patient seemed nearly convalescent, but owing to the extreme hot weather and some little error in diet, the disease returned and very shortly assumed a chronic form. The same treatment was pursued with the addition of brandy and port wine, but with little or no effect. The disease gradually advanced, the patient became more and more emaciated, and all the symptoms more aggravated, until the 10th of September, when her situation became exceedingly alarming. The bowels were exceedingly irritable, the skin hot and dry, the tongue thickly incrustated with a whitish fur, the thirst insatiable, eyes thrown back, and apparently insensible, a profound stupor supervened, and the mouth kept steadily open. On examining the evacuations from the bowels, I discovered small portions of what I believed to be the internal coat of the intestines. In this state of things my hopes all vanished, and I was about to give up my little daughter into the hands of its Creator; but recollecting the utility of lunar caustic (nitrate of silver) in severe cases of aphthæ, I determined to give it a trial in this case. Accordingly I dissolved one grain in a teaspoonful of the mucilage of gum arabic, and gave her one every four hours. After she had taken three portions I perceived the most happy effects about to take place, which inspired me with confidence in the remedy and a consequent determination to persevere, gradually increasing the dose and giving it at shorter intervals. The symptoms now began to abate, sensibility began to be restored, and every circumstance of the case seemed to promise a speedy convalescence. On the third day from the commencement of the caustic I discontinued it, and from that time the patient rapidly recovered upon a plentiful diet of poultry and sweet potatoes, and now she is a healthy and thrifty child.—*American Journal of the Medical Sciences.*

*New Principle in Cinchona.*—M. Van Mons has discovered a new principle in the bark of the *Cinchona montana*, which is white, crystallizable, and extremely bitter. The discoverer calls this *Montanine*, and says that he has cured intermittent fever in three days with it, in doses of two grains a day.—*Buchner, Repertorium für die Pharmacie.*

Whole number of deaths in Boston for the week ending Jan. 9, 23. Males, 12—Females, 11.

Of fever, 1—Intemperance, 1—infantile, 1—convulsions, 3—lung fever, 2—consumption, 6—dropsy on the brain, 1—child-bed, 1—inflammation of the bowels, 1—worms, 1—burn, 1—liver complaint, 1—throat distemper, 1—hooping cough, 1—scarlet fever, 1.

#### THE BOSTON MEDICAL AND SURGICAL JOURNAL

IS PRINTED AND PUBLISHED EVERY WEDNESDAY, BY CLAPP AND HULL, At 124 Washington Street, corner of Franklin Street, to whom all communications must be addressed, Post-paid. It is also published in Monthly Parts, on the 1st of each month, each Part containing the numbers of the preceding month, stitched in a cover.—Price \$3.00 per annum in advance, \$3.50 if not paid within six months, and \$4.00 if not paid within the year.—Postage the same as for a newspaper.